



## Toward a Faster and More Accurate Psoriatic Arthritis Diagnosis

Experts discuss key challenges and advancements in diagnosing psoriatic arthritis and the importance of early diagnosis

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Psoriatic arthritis is an [inflammatory autoimmune disease](#) that affects about [1.5 million](#) of the [1 in 5 adults with arthritis](#) in the United States. The total economic burden of arthritis in the US amounts to about \$135 billion US per year, but the [patient burden](#) includes pain, limited mobility, fatigue, depression, and social isolation. Due to the difficulty in diagnosing patients quickly and accurately, psoriatic arthritis diagnostics represents a significant unmet clinical need.

In this article, key experts share their perspectives on the challenges and advancements in diagnosing psoriatic arthritis, the importance of early diagnosis, and the potential of new diagnostic tools to improve patient outcomes.

Approximately [1 in 3 people](#) with the skin disease psoriasis will develop psoriatic arthritis. For

those seeking assessment and treatment of recent onset joint or other musculoskeletal symptoms, a diagnosis of psoriasis can certainly be helpful by pointing toward a diagnosis of psoriatic arthritis. However, other causes of arthritis in patients with psoriasis, such as osteoarthritis or rheumatoid arthritis, are quite common and can be difficult to differentiate from those of psoriatic arthritis.

In addition, psoriatic arthritis can develop before the typical skin rash indicative of psoriasis. The effect of this diagnostic uncertainty is that it can take an average of up to eight years to diagnose correctly, at which point bone damage may have already occurred. The accurate differentiation of rheumatoid versus psoriatic arthritis is critical, as the treatments are often different, and the bone damage caused before treatment is irreversible.

## Advancement in blood-based diagnostics

Pursuing a blood-based test for early psoriatic arthritis diagnosis has driven Atturo's CEO Robert Perryman, PhD, MBA, and translational researcher and Atturo's CSO Stephen Pennington, PhD, to employ sophisticated analytical techniques like mass spectrometry to develop an early and noninvasive diagnostic test. As Pennington states, "I'm a chemist/biochemist passionate about proteins, and I have spent all my academic career investigating proteins, right from the inception of the field of proteomics. More recently, I have focused on converting that academic research to something of benefit to patients." This work has resulted in evaluating panels of protein biomarkers that—together with Atturo's data analytics—can be used to calculate a score that rheumatologists can use to help diagnose patients more quickly, more accurately, and at an earlier stage of the disease.

Pennington has a long history with Agilent, having selected their instrumentation for his research for many years. In his words, the reason for choosing to work with Agilent comes down to more than just the performance of the hardware. "Agilent had the software that allowed us to go from discovery to targeted proteomics." He also mentioned having a great long-term relationship with the Agilent team. In fact, "The person who struck a deal with us to get the first instrument into our lab and up and running was a young salesman at Agilent called Pdraig McDonnell, who is now Agilent's new CEO."

"In the past 30 years, we've developed a better understanding of the disease, but have tests improved? The short answer is no. Not really," says Oliver Fitzgerald, MBBCh, BAO, MRCP, MD, chief medical advisor at Atturo's. In practice, diagnosis of psoriatic arthritis is a very labor-intensive and time-consuming process that involves the assessment of more than 60 joints

and searching for areas of scaling or redness suggestive of skin psoriasis on the body that may be hidden or not present at all.

At a time when doctors are under pressure to see more patients in less time, the waitlist to see a rheumatologist is long, and a thorough exam for a psoriatic arthritis diagnosis can take from 45 minutes up to an hour for a single patient. As a result, psoriatic arthritis may be missed or mis-diagnosed. While the right treatments can slow or stop joint damage caused by the disease, the joint damage that occurs while patients wait for a diagnosis can be painful and is irreversible.

## **Atturos RAPsA Dx test**

Atturos' pursuit of a blood-based test for early psoriatic arthritis diagnosis has led to the development of a sophisticated diagnostic tool, RAPsA Dx. The test distinguishes between patients with rheumatoid arthritis and those with psoriatic arthritis by analyzing protein biomarkers using mass spectrometry and data analytics, providing rheumatologists with accurate information for differentiation.

So, what comes next? Atturos is looking for the right clinical laboratory partner to help bring their test to patients in the US. As Perryman puts it, "It's a special feeling when you see something you have developed being used by a doctor to help a patient. It's very satisfying and very humbling."

Despite the challenges of diagnosing psoriatic arthritis, innovative tools developed by companies such as Atturos can significantly improve patient outcomes and reduce suffering. It's a testament to the impact that scientific dedication and persistence can have on people's lives.